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NEWSLETTER

Indiana State Department of Health

Epidemiology Resource Center
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Flu Vaccine Delays Expected for the 2000-01 Season

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Influenza vaccine manufacturers have told Food and Drug Administration (FDA) and the Centers for Disease Control and Prevention (CDC) to expect delays in flu vaccine shipments this season. In addition to manufacturing issues, the amount of available vaccine is compromised because one A(H3N2) strain of the vaccine is producing a lower than expected yield.

Due to definite delays and potential shortages of influenza vaccine, CDC and the Advisory Committee on Immunization Practices (ACIP) have issued modified recommendations for this season only.

❑ **Develop contingency plans and target high-risk persons.**

Even if there is not an actual vaccine shortage, the delay might create a public perception of a shortage. It is recommended that persons at greatest risk of complications from influenza are targeted. The following groups should be considered high risk:

- *Everyone 65 years and older*. While ACIP broadened its recommendation to include all persons ages 50-64 years of age, healthy persons in this age group are at a lower risk of serious complications than persons in this age group with underlying high-risk medical conditions.

- *Residents of long term care facilities*

Communicable Disease Reporting Rule

The revised Communicable Disease Reporting Rule for Physicians, Hospitals, and Laboratories (410 IAC 1-2.1) has completed all stages of the approval process and became effective October 11, 2000. This is the first revision since 1988 and a number of changes in reporting requirements were made reflecting differences in disease reporting needs since then. The rule should be available for review and downloading (BY NOVEMBER 1) at

www.state.in.us/legislative/iac/title410.html

The June 2000 issue of the Epidemiology Newsletter presented an article outlining major rule changes. The ISDH will shortly provide a user-friendly, working version of the rule.

- *Anyone with chronic health problems such as* heart disease, lung disease, asthma, kidney disease, diabetes or other metabolic diseases, anemia and other blood disorders
- *Anyone with a weakened immune system due to* HIV/AIDS or other diseases, long-term steroid or other drug treatment, or cancer treatments
- *Anyone 6 months to 18 years of age on long-term aspirin treatment* (Children under 9 years of age need 2 doses of vaccine.)
- *Women in the 2nd or 3rd trimester of pregnancy during the flu season*
- *Healthcare workers and caregivers of high risk persons*

- **Delay organized influenza vaccine campaigns.** Typically, the influenza season begins in December. It is possible for people to be vaccinated in November and still be protected before the flu season strikes.

- **Continue giving influenza vaccine throughout the influenza season and minimize vaccine waste.** Influenza activity often does not peak until after December, so people who are unvaccinated should be offered vaccine throughout the winter months. Persons develop immunity within 10 – 14 days of receiving the vaccine. If vaccine is still available, give it…even if it is February, March, or April. There is no date in which it is too late to give flu vaccine in a given season: if there is influenza activity, continue vaccinations.

- **Pneumococcal vaccine is recommended for many of the same people for whom influenza vaccine is indicated.** This vaccination could reduce some bacterial complications of influenza infection.

- **CDC does not support the routine or widespread use of influenza antiviral drugs to prevent influenza.** This is an untested and expensive strategy that could result in large numbers of persons experiencing adverse effects.

- **CDC web site for more information:** http://www.cdc.gov/ncidod/diseases/flu/fluvirus.htm

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Influenza Surveillance in Indiana

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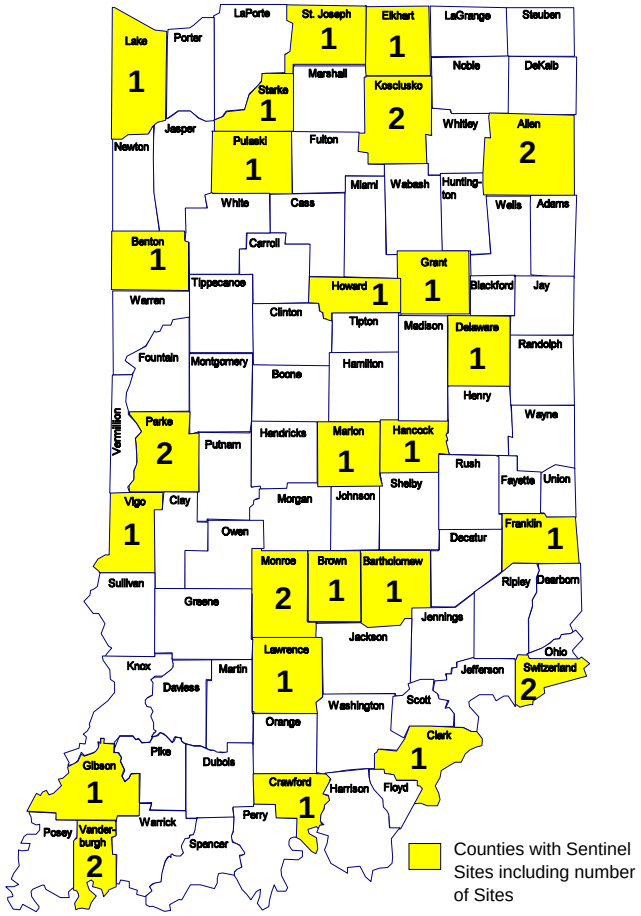
The Influenza Branch of the Centers for Disease Control and Prevention (CDC) conducts and coordinates surveillance for influenza in the United States each year from October through mid-May. Through voluntary reporting of influenza and influenza-like illness (ILI), data are collected from 31 Indiana sentinel sites and approximately 870 sentinel sites from 45 other States. From these data, CDC develops a national picture of:

- Influenza virus activity
- Geographic distribution of influenza viruses, and
- Impact of influenza on different age groups

Locations of Indiana Influenza Sentinel Sites, 2000 -2001 Influenza Season



Reporting Requirements

This year Indiana has 18 returning sentinel physicians and 13 newly recruited sentinel physicians in an effort to increase the accuracy and diversity of influenza reporting.

Sentinel sites transmit their ILI patient data to a central data repository at the CDC on a weekly basis from October to mid-May. The ILI case definition used for national surveillance is fever $\geq 100^{o}$ F **AND** cough **and/or** sore throat in absence of a known cause. Data can be reported via the Internet, telephone, or fax. Sentinel physicians provide the following summary data each week:

- ❏ Total number of patient visits
- ❏ Number of patient visits for ILI, in the following age groups:
  - 0-4 years (preschool)
  - 5-24 years (school age-college)
  - 24-64 years (adult)
  - $\geq$ 65 years (older adult)

In addition, physicians also submit nasopharyngeal swab specimens from patients with ILI to the Indiana State Department of Health Laboratory for culturing and subtyping. The throat cultures obtained will provide the identification of the influenza viruses circulating in the state. The data that sentinel physicians provide are critical for monitoring the impact of influenza and, when combined with other influenza surveillance data, can be used to guide prevention and control activities and identify vaccine strain selection.

Benefits of Surveillance: Pandemic Preparedness

The goal of the sentinel program is to accurately track each season's influenza incidence and help to prepare for the next pandemic. Influenza viruses are constantly evolving and cause substantial morbidity and mortality each year. Subtle changes to the viruses' genetic makeup may occur because viruses can be exchanged between humans and animals. The mutations are usually minor and result from a process known as an antigen drift. Although minor, mutations from antigenic drift necessitate a new vaccine.

When major mutations occur, the result is an antigen shift. Through antigenic shift, a novel virus emerges to which the vast majority of the population has no immunity. Roughly every thirty years, an incidence of an antigenic shift results. The last antigenic shift was in 1968 (the Hong Kong flu, which resulted in the deaths of 28,000 Americans). By simple calculations, an influenza pandemic is probable in the near future. The CDC reports that influenza is associated with about 20,000 deaths and more than 100,000 hospitalizations in any given year. Those numbers are substantially elevated during an influenza pandemic. According to estimates from the CDC, 80,000 to 300,000 people will die in the United States during the next pandemic.

Tuberculosis: Working Toward Elimination

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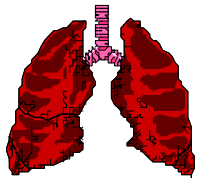


Tuberculosis (TB) continues to be one of the deadliest diseases in the world, with 8 million new cases and 3 million deaths reported worldwide each year. Approximately 95% of TB cases occur in developing countries where there are few resources to insure adequate treatment and where HIV infection is common.

Once the scourge of mankind, TB was no longer considered a problem in the United States as new cases declined rapidly from 1958 to 1985. The decline was due to the development of effective anti-tuberculosis drugs, a national public health emphasis on TB control, and improvements in living conditions. As the decline continued, it was thought that the disease had been conquered. But beginning in 1985, there was an increase in new cases due to the dismantling of TB control programs, the AIDS epidemic, and dramatic increases in new cases in persons born in countries where TB is common. This increase in new cases peaked in 1992, and has declined steadily since then. The United States is again working toward the goal of TB elimination, which is defined by the Centers for Disease Control and Prevention (CDC) as ≤1 case per 1,000,000.

Evidence of tuberculosis in humans dates back to at least 8,000 BC, where evidence of the disease has been documented in prehistoric skeletal remains in Germany. The disease has also been found in ancient Egyptian mummies. Tuberculosis has been known by such names as "consumption" and "white plague." For centuries, TB was thought to be inherited, because it tended to occur mainly in families who lived in crowded dwellings. In 1865, a French surgeon named Jean-Antoine Villemin proved that TB was contagious, and in 1882, the German scientist Robert Koch discovered the causative organism.

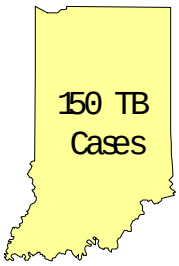
Tuberculosis is spread from person to person through the air by droplet nuclei containing the tubercle bacillus, *Mycobacterium tuberculosis*. Droplet nuclei are produced when a person with pulmonary or laryngeal tuberculosis coughs, sneezes, or engages in some other forceful expiratory activity. Only droplets that range in size from 1 to 5 µm are capable of entering the airways and establishing an infection. Droplets this small can also remain airborne for long periods of time due to air currents present in any indoor space. While larger droplets containing *M. tuberculosis* complex are also expelled, they do not serve as effective vehicles for transmission because they are generally too heavy to remain airborne. Even if inhaled, they do not reach the alveoli of the lungs.

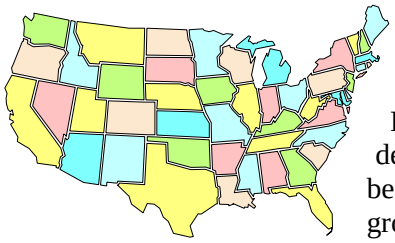
Because *M. tuberculosis* does not produce any type of toxin, there is no immediate response to the infection. It takes 2 to10 weeks for an immune response to develop, which may be detected by a reaction to the tuberculin skin test. In persons with intact cell-mediated immunity, activated T cells and macrophages engulf the TB bacilli and form granulomas, which limit the reproduction and spread of the organism. Development is arrested at this point, with most organisms eventually being destroyed, although some bacilli may remain dormant for years. Usually, a positive reaction to the tuberculin skin test is the only indication that infection has taken place. Persons with latent TB infection (LTBI), unlike those with active disease, are not infectious and cannot transmit tuberculosis.

Approximately 10% of persons with LTBI who are not given preventive therapy will develop active TB disease. Half will become ill within the first 2 years of becoming infected, while the other half will develop active disease at some point later in their lives. Most cases of active disease are the result of reactivation of an endogenous infection. This occurs when the person's immune system becomes compromised in some way. Persons infected with HIV are at a much higher risk of progressing to active disease than those whose immune systems are intact. Other types of medical conditions also reduce the ability of the host to defend against the organism, such as other immunosuppressive disorders, corticosteroid and other immunosuppressive drug therapy, diabetes mellitus, end-stage renal disease, silicosis, substance abuse (particularly injection drug use), and certain forms of cancer.

General systemic symptoms of active tuberculosis include fever, fatigue, loss of appetite, and weight loss. Specific symptoms depend upon the site of disease, which can occur in almost any organ system. A prolonged, productive cough is the most common symptom in pulmonary TB, which accounts for 80 to 85% of all TB cases. Tuberculosis must be treated with several drugs, typically isoniazid, rifampin, pyrazinamide, and ethambutol, for a long period of time. Treatment periods usually range from 6 to 9 months or longer, depending on the site of the disease, age, response to therapy, and drug resistance. Latent TB infection is usually treated with isoniazid alone for a recommended period of 9 months regardless of age or HIV status.

The year 1999 marked the seventh consecutive year in the decline in the numbers of new TB cases. There were 17,531 cases reported nationwide for a rate of 6.4 cases per 100,000 population. Indiana continues to be well below the national average with 150 cases reported in 1999 for a rate of 2.5 per 100,000.





However, to continue toward the goal of TB elimination and to prevent another nationwide resurgence, the United States must strengthen its role in global TB control efforts and ensure that TB control funding is not allowed to decrease. Research programs need to be expanded in the areas of drug and vaccine development, as well as new tests for latent TB infection. Programs also need to be developed for targeted testing and treatment of latent TB infection in high-risk groups, as well as increasing the use of directly observed therapy for persons with active disease. While the federal role in managing tuberculosis is vital, it is at the state and local levels that programs are developed that will work toward the national goal of TB elimination.

References:

1. Centers for Disease Control and Prevention. *Core Curriculum on Tuberculosis, 4th Edition, 2000.*

2. American Thoracic Society and Centers for Disease Control and Prevention. *"Diagnostic Standards and Classification of Tuberculosis in Adults and Children."* American Journal of Respiratory and Critical Care Medicine, Vol. 161, July 1999.

3. Institute of Medicine. *Ending Neglect: The Elimination of Tuberculosis in the United States.* 2000.

4. Friedman, Lloyd N. *Tuberculosis: Current Concepts and Treatment.* Boca Raton: CRC Press. 1994.

5. Schlossberg, David, ed.: *Tuberculosis*, Second Edition. New York: Springer-Verlag, Inc. 1988.

6. Centers for Disease Control and Prevention. *Self-Study Modules on Tuberculosis*, March 1995.

Conferences and Seminars

Educational Opportunity for
Local Health Departments coming up in December:

Satellite Conference on Bioterrorism:

Medical Response to Chemical Warfare and Terrorism 2000

Sponsored by:
U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID)

Military and civilian medical systems must be prepared to support battlefield and terrorist use of chemical agents. In support of that mission, the U.S. Army Medical Research Institute of Chemical Defense (USAMRICD) presents its second annual satellite broadcast on the Medical Response to Chemical Warfare and Terrorism.

This live, interactive, three-day satellite broadcast will inform and educate health care professionals and first responders serving the military, and supporting civil defense/domestic preparedness programs, about chemical agents and the proper medical responses in the event of intentional or accidental chemical agent exposure. It will also discuss battlefield management, decontamination of casualties, and personal protective equipment. Discussions on antiterrorism will be integrated throughout. The program will feature discussions with world-renowned scientists, researchers, clinicians, and counter-terrorism experts.

The year 2000 production will combine the best of last year's broadcast with exciting updates and cutting edge science, diagnostics, and therapeutics. The course is targeted to clinical health care professionals, but is appropriate for all personnel involved in the management and care of persons exposed to chemical agents.

Course Registration & Other Information:

The satellite broadcast will air:

December 5, 6, & 7, 2000
12:30-4:30 pm Eastern Standard Time

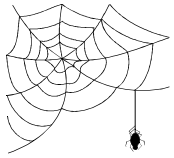
(SPACE IS LIMITED.) All sessions will be in the Commissioner's conference room (not the Board room):

Indiana State Department of Health
2 North Meridian Street
Indianapolis, Indiana

Local health department personnel are invited and encouraged to take part in the course. The course is free.

For more information, visit the following web site (more information on registering will be available next month):

http://ccc.apgea.army.mil



Wonderful Wide Web Sites

ISDH Data Reports Available

The ISDH Epidemiology Resource Center has the following data reports and the Indiana Epidemiology Newsletter available on the ISDH Web Page:

http://www.state.in.us/isdh/ (under Data and Statistics)

Indiana Cancer Incidence Report (1990, 95)

Indiana Cancer Mortality Report (1990-1994)

Indiana Health Behavior Risk Factors (1995-96, 97, 98)

Indiana Hospital Consumer Guide (1996)

Indiana Marriage Report (1995, 96, 97)

Indiana Mortality Report (1995, 97)

Indiana Natality Report (1995, 96, 97)

Indiana Natality/Induced Termination of Pregnancy/Marriage Report (1998)

Indiana Report of Diseases of Public Health Interest (1997, 98, 99)

The following site allows access to the web page for any state health department in the United States:

http://www.polsci.wvu.edu/grad/klase/STATEHEALTH/sthlth.html

HIV Disease Summary

Information as of Sept 30, 2000 (population 5,840,528)

HIV - without AIDS to date:

243	New cases from October 1999 thru September 2000	12-month incidence	4.16 cases/100,000
3,208	Total HIV-positive, without AIDS on September 30, 2000[1]	Point prevalence	54.93 cases/100,000[1]

AIDS cases to date:

351	New AIDS cases from October 1999 thru September 2000	12-month incidence	6.01 cases/100,000
2,603	Total AIDS cases on September 30, 2000[1]	Point prevalence	44.57 cases/100,000[1]
5,987	Total AIDS cases, cumulative (alive and dead)		

[1]Counting only cases alive in September 2000

REPORTED CASES of selected notifiable diseases

Disease	Cases Reported in September		Cumulative Cases Reported through September	
	1999	2000	1999	2000
Campylobacteriosis	48	63	391	449
E. coli O157:H7	20	14	69	88
Giardiasis	80	76	439	393
Hepatitis A	11	20	84	77
Hepatitis B	2	4	34	40
Legionellosis	4	2	30	29
Lyme Disease	3	2	17	22
Meningococcal, invasive	5	2	48	35
Pertussis	5	16	54	78
Rocky Mountain Spotted Fever	1	0	10	2
Salmonellosis	58	85	395	499
Shigellosis	44	160	219	1,295
Tuberculosis	13	16	110	101
Animal Rabies	12 (bats)	0	12 (bats)	0

For information on reporting of communicable diseases in Indiana, call the *ISDH Communicable Disease Division* at (317) 233-7665.

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The *Indiana Epidemiology Newsletter* is published by the Indiana State Department of Health to provide epidemiologic information to Indiana health professionals and to the public health community.